

Purchasing Receipts

PO No	Supplier	Line No	Rel No	Terms	Purchased Item	Description	For Project	Equipment ID	Order Qty	Due Date	Received Qty	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Due
P0039125	MES002-VC	1	1	Net 30	MT-4140-B-1.000X1.250	4140 Steel Bar 1.000 X 1.250 : AISI 4140N STEEL BAR PER MIL-S-5626, AMS 6382, AMS 6349, AMS 6529 receive ft				6/3/2018	6	S049427		Stock	3/8/2018	\$ 13.07 / ft	0	
		2			MT-4140-B-1.250X1.500	AISI 4140 Steel Bar 1.250X1.500 : Material: AISI 4140 STEEL BAR 6529 receive ft					6	S049428		Stock	3/8/2018	\$ 18.78 / ft	0	
		3			MT-4140-B-1.250X2.000	AMS 6382, AMS 6349, AS PER ASTM 6529, MIL-S-5626 MIN. ROCKWELL C = 28 RC MAX. 32 RC NOTE: cut material in 12"												
		4			MT-A513-T-0.750WV0.065	A513 Seamless Alloy Steel Round Tubing 0.75" dia. x 0.065" Wall			20		23	S049430		Stock	3/8/2018	\$ 2.70 / ft	0	
		5			M4140H-R1.375	4140 Round Bar 1.375 : AISI 4140H ROUND BAR PER AISI 4140OR ASTM A304-02/A-434-BC/A193-03-GRADE B7/A29-03/A322-91 OR UNS#-G41400 MINIMUM ULTIMATE TENSILE STRENGTH=100 KSI MINIMUM YIELD TENSILE STRENGTH=66KSI receive ft					20	S049431		Stock	3/8/2018	\$ 9.70 / ft	0	
		6			M1018R5.500	MATERIAL: AISI 1018-1025 ROUND BAR M1010S20GA AS PER MIL-S-7097 OR ASTM A108			4		4	S049432		Stock	3/8/2018	\$ 108.35 / ft	0	
		7			M17-4-H1150-R2.750	17-4 SS H1150 Round Bar 2.750" PH CONDITION H1150 receive ft			6		6	S049433		Stock	3/8/2018	\$ 148.95 / ft	0	
		8			M17-4-H1150-R3.750	17-4 SS H1150 Round Bar 3.750" PH CONDITION H1150 receive ft					6	S049434		Stock	3/8/2018	\$ 319.18 / ft	0	
Total:										74								
										77								\$:

PURCHASE ORDER

PO039125

Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200



Supplier:

MES002-VC
Métaux Solutions
2625 boul Jacques-Cartier Est
Longueuil
QC
J4N 1L7 Canada
Phone: 800 558 8858
Fax: 514 633 8044

Ship To:

1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Items

Line	Item	Part	Supplier	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
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1	MT-4140-B-	1.000X1.250		4140 Steel Bar 1,000 X 1,250 : AISI 4140N STEEL BAR PER MIL-S-5626, AMS 6382, AMS 6349, AMS 6529 receive ft	Firmed	3/7/18	6 ft	0 ft		\$13.06666/ft	\$78.40
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2	MT-4140-B-	1.250X1.500		AISI 4140 Steel Bar : Material: AISI 4140 STEEL BAR AS PER ASTM A29, AMS 6349, AMS 6382, AMS 6529, MIL-S- 5626 MIN. ROCKWELL C = 28 RC MAX. ROCKWELL C = 32 RC NOTE: cut material in 12" length	Firmed	3/7/18	6 ft	0 ft		\$18.78333/ft	\$112.70
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3	MT-4140-B-	1.250X2.000		AISI 4140 Steel Bar : Material: AISI 4140 STEEL BAR AS PER ASTM A29, AMS 6349, AMS 6382, AMS 6529, MIL-S- 5626 MIN. ROCKWELL C = 28 RC MAX. ROCKWELL C = 32 RC NOTE: cut material in 12" length	Firmed	3/7/18	6 ft	0 ft		\$19.091666/ft	\$114.55
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4	MT-A513-T-	0.750W0.085		A513 Seamless Alloy Steel Round Tubing 0.75"dia. x 0.085" Wall	Firmed	3/7/18	20 ft	0 ft		\$2.70/ft	\$54.00
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5	M4140H-	R1.375		4140 Round Bar 1.375 : AISI 4140H ROUND BAR PER AISI 4140OR ASTM A304-02/-A- 434-BC/-A193-03-GR4DE B7/- A29-03/-A322-91 OR UNS- G41400 MINIMUM ULTIMATE TENSILE STRENGTH=100 KSI MINIMUM YIELD TENSILE STRENGTH=66KSI receive ft	Firmed	3/7/18	20 ft	0 ft		\$9.70/ft	\$194.00
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Plex 2/27/18 8:06 AM dart.lavoie.chanta

PURCHASE ORDER

Line	Item	Part	Supplier	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
6	M1018R5.500			M1018R5.500 : MATERIAL: AISI 1018-1025 ROUND BAR M1010S20GA AS PER MIL-S-7097 OR ASTM A108	Firmed	3/7/18	4 ft	0 ft	4 ft	\$108.35/ft	\$433.40
7	M17-4- H1150- R2.750			17-4 SS H1150 Round Bar 2.750" : MATERIAL: 17-4 PH CONDITION H1150 receive ft	Firmed	3/7/18	6 ft	0 ft	6 ft	\$148.95/ft	\$893.70
8	M17-4- H1150- R3.750			17-4 SS H1150 Round Bar 3.750" : MATERIAL: 17-4 PH CONDITION H1150 receive ft	Firmed	3/7/18	6 ft	0 ft	6 ft	\$319.18333/ft	\$1,915.10
Grand Total: \$3,795.85											
Order Notes											
Procurement Quality Clauses											
A005 right of entry											
A012 chemical and physical test report											
A016 personnel qualification											
A017 raw material identification (as applicable)											
A026 certification of material conformance											
A041 quality management system											
A042 dart notification by supplier											
A043 retention of quality documents											
A048 counterfeit parts avoidance, detection, mitigation and disposition program											
A049 supplier awareness											
Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.											

Plex 2/27/18 8:06 AM dart.lavoie.chantal

*** Continued on Next Page ***

Item No.	Description	Qty	Qty. Deliver	B/O Qty
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***** FACTURER E-MAIL ***** SUPER IMPORTANT SUR
LE PACKING SLIP INSCRIRE LES HEAT N

MP141H 4140 HTSR PLATE 1.00" THICK

1 X 1.25" X 72" HT:pm94384

MP11441H 4140 HTSR PLATE 1.250" THICK

6 X 1.5" X 12"

HT:pm94549

MP11441H 4140 HTSR PLATE 1.250" THICK

6 X 2" X 12"

HT:pm94549

DT34083 MS TUB .750" X .083 WALL SMLS

1 X 23"

HT:156C1472

MR13841H 4140 HTSR ROU 1.375" DIA

1 X 20" R/L

ht:243795

HR512 HRS ROU 5.500 DIA 1018/1020

1 X 48" *****

HT:22086418

SR234174 ST 17-4PH ROU 2.750 DIA COND. H1150

1 X 72" *****

HT:269468

SR334174 ST 17-4PH ROU 3.750 DIA COND. H1150

1 X 72" *****

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Tel.: 1 613 632-3336

Same

Ship To

Customer: 6323336

DART AEROSPACE LTD
1270, ABERDEEN STREET
HAWKESBURY, ONTARIO
K6A 1K7

METAUX SOLUTIONS INC
2625 BOUL JACQUES CARTIER EST
LONGUEUIL, QUEBEC
J4N 1L7
Tel.: 450 641-3330

Order
Reference
Ship

: 133100
: PO039125
: PICK UP / PICK UP

Shipping Order

07/03/2018

Shipping Order 07/03/2018

Order Reference : 133100
Ship Reference : PO039125
Ship To : PICK UP / PICK UP

METAUX SOLUTIONS INC
2625 BOUL JACQUES CARTIER EST
LONGUEUIL, QUEBEC
J4N 1L7
Tel : 450 641-3330

Customer : 6323336

Ship To

DART AEROSPACE LTD
1270, ABERDEEN STREET
HAWKESBURY, ONTARIO
K6A 1K7

Tel.: 1 613 632-3336

Same

Item No.	Description	Qty	Qty. Delivered	B/O Qty
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SHIP JOURNEY COLLECT
JP

HT,9sh0213-b202

Shipping :
Package No :
Merchandise Received :
Ref. :

Ship To:
 METAUX SOLUTIONS
 2625 BOUL. JACQUES-CARTIER EST
 LONGUEUIL QC J4N1L7
 CANADA

Sold To:
 METAUX SOLUTIONS
 2625 BOUL JACQUES CARTIER EST
 LONGUEUIL QC J4N 1L7
 CANADA
 f.davis@metauxsolutions.com

Ship Date: 2/13/2018
 F.O.B.: Washington
 Ship Via: Will Call
 Tracking Number 0217

Sales Order: 218678		Customer PO: 44152-JF		Drop Ship Ref:	
Product Description		Shipped Pcs	Shipped Lbs	Back Order	PO LINE
MSP12500		1.00	1.801.00	0.00	
1-1/4 X 34 1/16" MARSHALLOY STANDARD DELUXE PLATE 4140/42 PRE					
MARSHALLOY STANDARD DELUXE					
ASTM A-829					
DFARS Compliant					
PLATE#: 424244B					
Country of Origin SLOVENIA					
C -	0.4130	P -	0.0070	SI -	
Mo -	0.9600	Cu -	0.2500		
Cr -	0.1800	V -	0.0350		
BHN 301.00		PM HEAT#: 94549			
Product Description		Shipped Pcs	Shipped Lbs	Back Order	PO LINE
MSP12500		1.00	1.805.00	0.00	
1-1/4 X 34 1/4" MARSHALLOY STANDARD DELUXE PLATE 4140/42 PREH.					
MARSHALLOY STANDARD DELUXE					
ASTM A-829					
DFARS Compliant					
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		
BHN 310.00		PM HEAT#: 94492			
PLATE#: 424249B					
Country of Origin SLOVENIA					
C -	0.4200	P -	0.0070	SI -	
Mo -	0.9900	Cu -	0.2470		
Cr -	0.1600	V -	0.0380		

Sales Order: 218678 Customer PO: 44152-JF Drop Ship Ref:

Product Description
MSP10000
1 X 34 1/8" X 145 3/4" MARSHALLOY STANDARD DELUXE PLATE 4140/42 PREHARC
MARSHALLOY STANDARD DELUXE
ASTM A-829
DFARS Compliant
PLATE#: 422309A
Country of Origin SLOVENIA
C - 0.4100 Mn -
Cr - 0.9600 Mo -
P - 0.7970 Cu - 0.1600
S - 0.0070 V - 0.2160
SI - 0.0010
BHN 264.00
0.2250
0.00

Product Description
MSP20000
2 X 34 3/16" X 146 3/16" MARSHALLOY STANDARD DELUXE PLATE 4140/42 PREHA
MARSHALLOY STANDARD DELUXE
ASTM A-829
DFARS Compliant
PLATE#: 423458A
Country of Origin SLOVENIA
C - 0.4000 Mn -
Cr - 0.9600 Mo -
P - 0.7640 Cu - 0.1500
S - 0.0100 V - 0.2500
SI - 0.0005
BHN 298.00
0.2500
0.2200

Product Description
MSP20000
2 X 33 15/16" X 145 13/16" MARSHALLOY STANDARD DELUXE PLATE 4140/42 PREH
MARSHALLOY STANDARD DELUXE
ASTM A-829
DFARS Compliant
PLATE#: 423941B
Country of Origin SLOVENIA
C - 0.4100 Mn -
Cr - 1.0500 Mo -
P - 0.7690 Cu - 0.1700
S - 0.0070 V - 0.1520
SI - 0.0002
BHN 309.00
0.2260
0.1100

Product Description
A2-30000
3 X 32 15/16" X 117 3/8" A2 PLATE
AIRTRUE DELUXE
ASTM A-681-08
DFARS Compliant
PLATE#: 423987A
Country of Origin USA
C - 0.9800 Mn -
Cr - 5.2000 Mo -
P - 0.7700 Cu - 1.0100
S - 0.0190 V - 0.1700
SI - 0.0030
BHN 217.00
0.3000
0.1300

PM HEAT#: 94479

PM HEAT#: 94504

PM HEAT#: 94466

PM HEAT#: 94384

CERTIFICATE OF TEST CERTIFICAT D'ESSAIS

CUSTOMER ORDER NUMBER
NUMERO DE COMMANDE DU CLIENT

44279-J

PART NUMBER/NUMERO DE PIECE

506428

SOLD TO: METAUX SOLUTIONS INC. SHIP TO: EXPEDIE A:
2625 BOUL JACQUES CARTIER EST
LONGUEUIL QC J4N 1L7
2625 BOUL JACQUES CARTIER EST
LONGUEUIL QC J4N 1

Description: 4140/4142 HR HT BAR STRESS FREE 269/321 BHN
HEAT: 243795
ITEM: 506428
Line Total: 101.06 LB

Specifications:
ASTM A193 GR B7 16
ASTM A962/A962M SEC 16
JDM AO QL-2
ASTM A304 16
ASTM E10 15
ASTM A751 14
ASTM A388/A388M (S1) 16
MIC 6016/2016 ADD 10 16
ASTM A370 16
ASTM E709 15
ASTM E112 13
ASTM A29 16
ASME SA193 GR B7 01

CHEMICAL ANALYSIS

C	AL	CU	SN	TI	B	V	NB	AS	MO
0.421	0.98	0.32	0.013	0.011	1.05	0.18	0.23		
SI	P	S	CR	NI					
CA	SB	CO	H						
0.0005	0.001	0.0090	0.0001						

RCPT: R383318

COUNTRY OF ORIGIN : ITALY

MECHANICAL PROPERTIES

DESCRIPTION	YLD STR	ULT TEN	%ELONG	%RED	HARDNESS
	KSI	KSI	IN 02 IN	IN AREA	BHN
	131.0	146.0	16.5	52.0	315

The above data were transcribed from the manufacturer's Certificate of Test after verification for completeness and specification requirements of the information on the certificate. All test results remain on file subject to examination. /Les informations ci-haut-mentionnées sont transcrits du certificat d'essais du fabricant après vérification de l'état complet des spécifications inscrites sur le certificat. We hereby certify that the material covered by this report will meet the applicable requirements described herein, including any specification forming a part of the description. /Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.

The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under federal statutes. /Les informations fausses, fictives ou frauduleuses en rapport avec le résultat des essais sont punissables en vertu des lois fédérales.

MANAGER QUALITY ASSURANCE
GÉRANT DE L'ASSURANCE QUALITÉ

JOANNE DESPRES

Material did not come in contact with mercury while in our possession. /Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.

Certification Date
5-MAR-2018

Page 01 of 03

Invoice Number

S704138

CERTIFICATE OF TEST
CERTIFICAT D'ESSAIS

CUSTOMER ORDER NUMBER
NUMÉRO DE COMMANDE DU CLIENT

44279-J
PART NUMBER/NUMÉRO DE PIÈCE

506428

SOLD TO: METAUX SOLUTIONS INC. SHIP TO: EXPÉDIE À:
2625 BOUL JACQUES CARTIER EST
VENDU À: 2625 BOUL JACQUES CARTIER EST
LONGUEUIL QC J4N 1L7

METAUX SOLUTIONS (RIVE-SUD)
2625 BOUL JACQUES CARTIER EST
LONGUEUIL QC J4N 1

Description: 4140/4142 HR HT BAR STRESS FREE 269/321 BHN
1-3/8 RD X 20' R/L
HEAT: 243795
ITEM: 506428

END-QUENCH HARDENABILITY (JOMINY - RC)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
58 58 58 57 57 56 56 55 55 54 53 52 51 50 50
16 18 20 22 24 26 28 30 32 43
49 48 47 46 45 45 44 43

IDEAL DIAMETER : 7.47 IN GRAIN SIZE : 8 -

IMPACT TEST
TYPE TEMP ORNT SMPLE#1 #2 #3 AVG
CHAMPY 68 F LONG
CLEANLINESS

A B C D
THIN THICK THIN THICK THIN THICK THIN THICK
MAX MAX MAX MAX MAX MAX MAX MAX
1.5 1.0 1.5 0.5 0.0 0.0 0.0 1.5 1.0
e45

STRAND CAST
VACUUM DEGASSED
MATERIAL IS FREE FROM MERCURY CONTAMINATION
NO WELD REPAIR PERFORMED ON MATERIAL
THERMAL TREATMENT: OK
AUSTENITIZE 1616 DEG F WATER X 122'
TEMPERED 1166 DEG F AIR X 143'
STRESS RELIEVED 1094 DEG F X 143'

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JOANNE DESPRES

Material did not come in contact with mercury while in our possession. /Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.

MANAGER QUALITY ASSURANCE
GÉRANT DE L'ASSURANCE QUALITÉ

CERTIFICATE OF TEST CERTIFICAT D'ESSAIS

CUSTOMER ORDER NUMBER
NUMÉRO DE COMMANDE DU CLIENT

44279-J

PART NUMBER/NUMÉRO DE PIÈCE

506428

SOLD TO: METAUX SOLUTIONS INC.
VENDU À:

SHIP TO:
EXPÉDIE À:

METAUX SOLUTIONS (RIVE-SUD)
2625 BOUL JACQUES CARTIER EST
LONGUEUIL QC J4N 1

2625 BOUL JACQUES CARTIER EST
LONGUEUIL QC J4N 1L7

Description: 4140/4142 HR HT BAR STRESS FREE 269/321 BHN
1-3/8 RD X 20' R/L
HEAT: 243795
ITEM: 506428
Line Total: 101.06 LB

QUENCH WATER TEMP: BEFORE 86 DEG F AFTER 108 DEG F

MICRO1: OK

MACRO: OK

COMMENTS
red. ratio = 60

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MANAGER QUALITY ASSURANCE
GÉRANT DE L'ASSURANCE QUALITÉ

Joanne Despres

JOANNE DESPRES

Material did not come in contact with mercury while in our possession. /Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.

Certification Date
5-MAR-2018

Invoice Number
S704138

CERTIFICATE OF TEST CERTIFICAT D'ESSAIS

CUSTOMER ORDER NUMBER
NUMÉRO DE COMMANDE DU CLIENT

44279-J

PART NUMBER/NUMÉRO DE PIÈCE

503415

SOLD TO:
VENDU À:

METAUX SOLUTIONS INC.

SHIP TO:
EXPÉDIE À:

METAUX SOLUTIONS (RIVE-SUD)
2625 BOUL JACQUES CARTIER EST
LONGUEUIL QC J4N 1L7

2625 BOUL JACQUES CARTIER EST
LONGUEUIL QC J4N 1L7

Description: 1018 HR BAR

ASTM A576

5-1/2" RD X 4.14" (52.0")

REMANANT

ITEM: 503415

Specifications:

ASTM A576 90B
ASTM A36
ASTM A388/A388M 11
ASTM E45 A 13
ASTM A370 12A

MIC 13015 ADD 7 16
ASTM A675 GR 60
EN 10204 3.1
ASTM E381 01
ASTM A711/A711M 07

ASTM A29/A29M
JDM AO QLT2
ASTM E112 13
ASTM A751 11
ASTM E10 12

Line Total: 350.3 LB

CHEMICAL ANALYSIS

C	MN	SI	P	S	CR	NI	MO
0.17	0.68	0.17	0.012	0.031	0.07	0.05	0.02
V	CU	SN	AL	TI	NB	N	B
0.002	0.12	0.007	0.025	0.0009	0.004	0.0074	0.0004
PB	H	CA	W	CO			
0.003	0.0001	0.0005	0.001	0.004			

RCPT: R352771

COUNTRY OF ORIGIN : FOREIGN

MECHANICAL PROPERTIES

DESCRIPTION	YLD STR	ULT TEN	%ELONG	%RED	HARDNESS
	PSI	PSI	IN 02 IN	IN AREA	BHN
	38119.0	67832.0	26.0	58.0	131

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MANAGER QUALITY ASSURANCE
GÉRANT DE L'ASSURANCE QUALITÉ

JOANNE DESPRES

Material did not come in contact with mercury while in our possession. /Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.

Certification Date
5-MAR-2018

Invoice Number
S704139

CERTIFICATE OF TEST CERTIFICAT D'ESSAIS

Page 02 of 02

Certification Date 5-MAR-2018

Invoice Number S704139

CUSTOMER ORDER NUMBER
NUMERO DE COMMANDE DU CLIENT

44279-J
PART NUMBER/NUMERO DE PIECE

503415

SOLD TO: METAUX SOLUTIONS INC.
VENDU A: METAUX SOLUTIONS (RIVE-SUD)

2625 BOUL JACQUES CARTIER EST
LONGUEUIL QC J4N 1L7

2625 BOUL JACQUES CARTIER EST
LONGUEUIL QC J4N 1L7

Description: 1018 HR BAR ASTM A576
5-1/2 RD X 4'4.0" (52.0") REMNANT

Line Total: 350.3 LB

ITEM: 503415

IDEAL DIAMETER: 11.09 IN GRAIN SIZE: 6

CLEANLINESS

	A	B	C	D
THIN	MAX	THIN	THICK	THIN
THICK	MAX	THICK	MAX	THICK
e45	2.0	1.5	0.0	0.5

VACUUM DEGASSED

INGOT CAST
REDUCTION RATIO 18.7 TO 1
MATERIAL IS FREE FROM MERCURY CONTAMINATION
NO WELD REPAIR PERFORMED ON MATERIAL

ULTRASONIC: YES
MACRO: OK
MICRO1: OK

COMMENTS
chemistry cont:

as 0.0040, zr 0.0010, sb 0.0002, zn 0.0010

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MANAGER QUALITY ASSURANCE
GÉRANT DE L'ASSURANCE QUALITÉ

JOANNE DESPRES

Material did not come in contact with mercury while in our possession./Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.

CERTIFICATE OF TEST CERTIFICAT D'ESSAIS

Page 01 of 02
Certification Date 5-MAR-2018

CUSTOMER ORDER NUMBER
NUMÉRO DE COMMANDE DU CLIENT

44279-J

PART NUMBER/NUMÉRO DE PIÈCE

527141

SOLD TO: METAUX SOLUTIONS INC.
EXPÉDIE À: 2625 BOUL JACQUES CARTIER EST
LONGUEUIL QC J4N 1L7
METEAUX SOLUTIONS (RIVE-SUD)
2625 BOUL JACQUES CARTIER EST
LONGUEUIL QC J4N 1

Description: 17-4 HR RT BAR COND H1150
HEAT: 269468
ITEM: 527141

Specifications:
AMS 5643 U
ASTM A484 16
ASTM A370 17
ASTM A564 TYPE 630 10
EN 10204 3.1
AMS 8 6875 B
ASTM A564 TYPE 630 13

CHEMICAL ANALYSIS

C	MN	P	S	SI	CR	NI	MO
0.0360	0.49	0.023	0.023	0.38	15.86	4.35	0.25
CU	N	CB	TA	CPTA			
3.29	0.035	0.27	0.0019	0.2719			

RCPT: R403893

COUNTRY OF ORIGIN : ITALY

MECHANICAL PROPERTIES

DESCRIPTION	YLD STR	PSI	ULT TEN	%ELONG	%RED	HARDNESS
COND H1150	131500.0	PSI	146600.0	21.6	63.2	310
		IN 02 IN			IN AREA	BHN

GRAIN SIZE : 8

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MANAGER QUALITY ASSURANCE
GÉRANT DE L'ASSURANCE QUALITÉ

JOANNE DESPRES

CERTIFICATE OF TEST
CERTIFICAT D'ESSAIS

CUSTOMER ORDER NUMBER
NUMERO DE COMMANDE DU CLIENT

44279-J

PART NUMBER/NUMERO DE PIECE

527141

SOLD TO: METAUX SOLUTIONS INC. SHIP TO: EXPEDIE A:

METAUX SOLUTIONS (RIVE-SUD)
2625 BOUL JACQUES CARTIER EST
LONGUEUIL QC J4N 1L7

Certification Date
5-MAR-2018

Invoice Number
T376763

Description: 17-4 HR RT BAR COND H1150
2-3/4 RD S/C 6.0" (72.0")
HEAT: 269468
ITEM: 527141
Line Total: 121.26 LB
ASTM A564

MATERIAL IS FREE FROM MERCURY CONTAMINATION
NO WELD REPAIR PERFORMED ON MATERIAL

MACRO: OK
MICRO1: OK

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JOANNE DESPRES

Material did not come in contact with mercury while in our possession. Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.

MANAGER QUALITY ASSURANCE
GERANT DE L'ASSURANCE QUALITE

CERTIFICATE OF TEST CERTIFICAT D'ESSAIS

CUSTOMER ORDER NUMBER
NUMERO DE COMMANDE DU CLIENT

44279-J

PART NUMBER/NUMERO DE PIECE

527145

SOLD TO: METAUX SOLUTIONS INC. SHIP TO: METAUX SOLUTIONS (RIVE-SUD)
VENDU A: 2625 BOUL JACQUES CARTIER EST EXPEDIE A: 2625 BOUL JACQUES CARTIER EST

LONGUEUIL QC J4N 1L7 LONGUEUIL QC J4N 1

Description: 17-4 HR RT BAR COND H1150
HEAT: 95H0213-B202
ITEM: 527145
ASTM A564
Line Total: 225.54 LB

Specifications:
AMS 5643 U
ASTM A388 16A
EN 10204 3.1
ASTM A564 TYPE 630 13
ASME SA564 TYPE 630 13

CHEMICAL ANALYSIS

C	SI	MN	P	S	NI	CR	MO
0.01	0.35	0.57	0.021	0.001	4.70	15.28	0.15
CU	NBTA	NB	TA				
3.28	0.26	0.25	0.005				

RCPT: R407275

COUNTRY OF ORIGIN : TAIWAN

MECHANICAL PROPERTIES

DESCRIPTION	YLD STR	ULT TEN	%ELONG	%RED	HARDNESS
COND H1150	120.0 KSI	140.0 KSI	24.0 IN 02 IN	75.0 IN AREA	31 RC

GRAIN SIZE : 6

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MANAGER QUALITY ASSURANCE
GÉRANT DE L'ASSURANCE QUALITÉ

JOANNE DESPRES

Material did not come in contact with mercury while in our possession. /Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.

CERTIFICATE OF TEST CERTIFICAT D'ESSAIS

CUSTOMER ORDER NUMBER
NUMÉRO DE COMMANDE DU CLIENT

44279-J

PART NUMBER/NUMÉRO DE PIÈCE

527145

SOLD TO: METAUX SOLUTIONS INC.
VENDU À: METAUX SOLUTIONS

SHIP TO:
EXPÉDIE À:

2625 BOUL JACQUES CARTIER EST
LONGUEUIL QC J4N 1

METAUX SOLUTIONS (RIVE-SUD)

Certification Date
5-MAR-2018

Invoice Number
T376762

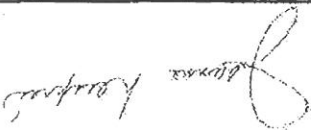
Page 02 of 02

Description: 17-4 HR RT BAR COND H1150
3-3/4 RD S/C 6.10" (72.0")
HEAT: 9SH0213-B202
ITEM: 527145
MATERIAL IS FREE FROM MERCURY CONTAMINATION
NO WELD REPAIR PERFORMED ON MATERIAL
MACRO: OK
MICRO1: OK

ASTM A564
Line Total: 225.54 LB

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JOANNE DESPRES



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MANAGER QUALITY ASSURANCE
GÉRANT DE L'ASSURANCE QUALITÉ

Material Test Report

aris LLC

MTR No.	0000056608
Date	4/30/2016

7953 Washington Woods Dr.,
Dayton, OH 45459
Phone: (937)573-4676 Fax: (702)928-4128

TEST CERTIFICATE ACC TO DIN 60049 3.1 B/EN: 10204: 3.1

Part Number: 87-15955-17

PO Number: 87-15955

Description: A513T5-14; SRA; DOM; Grade: 1020; Category: CARBON WELDED; Round; OD=0.750"; ID=0.584"; (WT=0.083"); Deburred; Length=240" to 288"

Ends: Deburred

Steel Grade: 1020

DIMENSIONS			
MM	IN	MM	IN
OD	19.050	0.750	0.0050
ID	14.834	0.584	0.0050
WT	2.108	0.083	0.0000
TOLERANCE			
MM	IN	MM	IN
OD	0.0050	0.0050	0.0000
ID	0.0050	0.0050	0.0000
WT	0.0050	0.0050	0.0000
QUANTITY			
NUMBER	METER / FT	WEIGHT TON	
1	1,598.371	5,244.000	1.550
6,086,000 - 7,316,200 MM 240,000 - 288,000 IN			

CHEMICAL ANALYSIS

ELEMENTS	UOM	MIN	MAX	PRODUCT
Carbon (C)	%	0.1800	0.2300	0.1900
Manganese (Mn)	%	0.3000	0.6000	0.4300
Silicon (Si)	%	0.1700	0.4300	0.1700
Aluminum (Al)	%	0.0460	0.0120	0.0460
Phosphorus (P)	%	0.0350	0.0120	0.0350
Sulfur (S)	%	0.0350	0.0120	0.0350
Chromium (Cr)	%	0.0350	0.0120	0.0350
Nickel (Ni)	%	0.0350	0.0120	0.0350
Molybdenum (Mo)	%	0.0350	0.0120	0.0350
Vanadium (V)	%	0.0350	0.0120	0.0350
Copper (Cu)	%	0.0350	0.0120	0.0350
Columbium (Cb)	%	0.0350	0.0120	0.0350
Calcium (Ca)	%	0.0350	0.0120	0.0350
Titanium (Ti)	%	0.0350	0.0120	0.0350
Nitrogen (N)	%	0.0350	0.0120	0.0350
Boron (B)	%	0.0350	0.0120	0.0350
Zirconium (Zr)	%	0.0350	0.0120	0.0350
Antimony (Sb)	%	0.0350	0.0120	0.0350
Tin (Sn)	%	0.0350	0.0120	0.0350

MECHANICAL PROPERTIES			
Y.S	U.T.S	% E	HARDNESS
MIN	55,000	65,000	10.00
MAX	67,830	76,010	20.00
PROD	67,830	76,010	80.00
Tensile Spec Type:			
Gauge Width (MM):			
Sample Orientation:			
Remarks:			

100% EDDY CURRENT TESTING- E309			
PASSED			
FLATTENING TEST			
2/3% OF OD 1/3% OF OD PASSED			
FLARING TEST			
15% OF ID PASSED			
STRAIGHTNESS			
PASSED (1/1000 MM)			

Remarks:

Melted In: INDIA

Produced In: INDIA

Product is free of weld repair and has not come in contact with Mercury or any of its components.

We hereby Certify that the material described above conforms to Specification and Purchase Order.

Bill Johnston

Quality Co-ordinator

Any questions, Please email: TestReports@aris-llc.com

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M1018 R5.500 DATE: MAR 08 2018

MATERIAL CERT REC'D: YES
 QUANTITY RECEIVED: 4'
 QUANTITY INSPECTED: 4'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 5.500
 THICKNESS RECEIVED: 5.500
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

PO / BATCH NO.: 039125/5049432

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	
CORROSION	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/>	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	
PHOTO REQUIRED	<input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
HRC	HRB	DUR A	DUR D	WEBSTER
RECORD RESULTS BELOW				
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

QC 18 INSPECTION
 ENGINEERING SIGNOFF (if required)
 INSPECTED BY: DAS
 SIGNED OFF BY: _____
 DATE: 9-89 MAR 08 2018

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 1018-1025 ROUND BAR
SPECIFICATION: MIL-S-7097 OR ASTM A108

PART NUMBER: M1018-R/D DDD WHERE D DDD = DIAMETER IN INCHES
DIA.

EG. 7/8" ROUND BAR = M1018-R0.875

TOLERANCES: PER ASTM A108 AS FOLLOWS:

SIZE	TOLERANCE
UP TO 1.5" INCL.	+0.000/-0.002
OVER 1.5" TO 2.5" INCL.	+0.000/-0.003
OVER 2.5" TO 4.0" INCL.	+0.000/-0.004
OVER 4.0" TO 6.0" INCL.	+0.000/-0.005
OVER 6.0" TO 8.0" INCL.	+0.000/-0.006

B	REFORMAT, ADD ASTM A108, ADD TOLERANCES	CP	12.09.05
A	NEW ISSUE	DS	01.06.12
REV.	DESCRIPTION	BY	DATE
DESIGN	DS		
DRAWN	CP		
CHECKED	CP		
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	12.09.05		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA
DRAWING NO. M1018-R
REV. B
SHEET 1 OF 1
SCALE NTS
COPYRIGHT © 2001 BY DART AEROSPACE LTD.
NOT TO BE USED FOR ANY OTHER PURPOSE OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.

1018-1025
2012-09-24
MD

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M17-4-H1150-R3.750 DATE: MAR 08 2018

THICKNESS ORDERED: 3.750 THICKNESS RECEIVED: 3.750

SHEET SIZE ORDERED: N/A SHEET SIZE RECEIVED: N/A

MATERIAL CERT REC'D: Y QUANTITY RECEIVED: 6

QUANTITY INSPECTED: 6 QUANTITY REJECTED: 0

PO / BATCH NO.: 039125/5049434

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y	
CORRECT FINISH	<input checked="" type="radio"/> Y	
CORROSION	<input checked="" type="radio"/> Y	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	
CORRECT THICKNESS	<input checked="" type="radio"/> Y	
PHOTO REQUIRED	<input checked="" type="radio"/> Y	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

QC 18 INSPECTION ENGINEERING SIGNOFF (if required)

INSPECTED BY: DAS SIGNED OFF BY: _____

DATE: 9-89 MAR 08 2018

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 17-4 PH / S17400 / TYPE 630 SS ROUND BAR
GRAIN MUST BE ALONG LENGTH OF BAR
MINIMUM YIELD STRENGTH PER TABLE
MINIMUM ULTIMATE STRENGTH PER TABLE

SPECIFICATION: AMS 5643 OR ASTM A564
PART NUMBER: M17-4-111111-1 R1 XXXX WHERE: 111111 SPECIFIES THE MATERIAL CONDITION (PER TABLE BELOW)
COND O.D. X.XXX = DIAMETER (IN INCHES)

MATERIAL CONDITION TABLE:

CODE	CONDITION	MIN YIELD TENSILE STRENGTH (KSI)	MIN ULTIMATE TENSILE STRENGTH (KSI)
(OMITTED)	NONE SPECIFIED (CONDITION A NOT ACCEPTABLE)	100	150
H900	H900	170	190
H925	H925	155	170
H1025	H1025	145	155
H1075	H1075	125	145
H1100	H1100	115	140
H1150	H1150	105	135
CONDA	CONDITION A (SOLUTION TREATED)		

NOTES: MATERIAL IN H900 AND H925 CONDITION NOT RECOMMENDED FOR TENSION OR SHEAR APPLICATIONS IN COLD WEATHER CONDITIONS
MATERIAL IN H900 AND H925 CONDITION NOT RECOMMENDED FOR APPLICATIONS WHERE STRESS CORROSION CRACKING IS POSSIBLE
CONDITION A NOT TO BE USED IN DESIGN FOR FINAL PRODUCT AND SHOULD ALWAYS BE HEAT TREATED

EXAMPLES:

PART 4.000" DIAMETER BAR MIN LITS = 150 KSI, MIN YTS = 100 KSI PART NUMBER M17-4-R4.000
2.500" DIAMETER BAR H900 CONDITION M17-4-H900-R2.500
3.250" DIAMETER BAR H1025 CONDITION M17-4-H1025-R3.250
0.750" DIAMETER BAR A CONDITION M17-4-CONDA-R0.750

RELEASED
11 2017-10-31
Ew17-728

APPROVED

DESIGN	NO	DESCRIPTION	NO	DATE
DRAWN	NO	DART AEROSPACE LTD	NO	17.09.14
CHECKED	CP	HAWKESBURY, ONTARIO, CANADA	VS	10.05.20
MFG. APPR.	RA		CP	05.03.16
APPROVED	WM		BY	DATE
DE APPR.	CP	17-4 SS ROUND BAR		
DATE	17.09.14			

REV. C SHEET 1 OF 1 SCALE NTS

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Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: DAS		SIGNED OFF BY:	
DATE: 9-89 MAR 08 2018		DATE:	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	
CORROSION	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/>	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	
PHOTO REQUIRED	<input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	
CORRECT # ON THE MATERIAL	<input checked="" type="checkbox"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="checkbox"/>	

MATERIAL CERT REC'D:	Yes	THICKNESS ORDERED:	2.750
QUANTITY RECEIVED:	61	THICKNESS RECEIVED:	2.750
QUANTITY INSPECTED:	61	SHEET SIZE ORDERED:	N/A
QUANTITY REJECTED:	0	SHEET SIZE RECEIVED:	N/A

MATERIAL: M17-4-H150R2.750	DATE: MAR 08 2018
PO / BATCH NO.: 039185/50494/33	

MATERIAL RECEIPT INSPECTION FORM

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 17-4 PH / S17400 / TYPE 630 SS ROUND BAR
GRAIN MUST BE ALONG LENGTH OF BAR
MINIMUM YIELD STRENGTH PER TABLE
MINIMUM ULTIMATE STRENGTH PER TABLE

SPECIFICATION: AMS 5643 OR ASTM A564
PART NUMBER: M17-4-1 HHHH-R X.XXX WHERE: HHHH SPECIFIES THE MATERIAL CONDITION (PER TABLE BELOW)
COND O.D. X.XXX = DIAMETER (IN INCHES)

MATERIAL CONDITION TABLE:

CODE	CONDITION	MIN YIELD TENSILE STRENGTH (KSI)	MIN ULTIMATE TENSILE STRENGTH (KSI)
(OMITTED)	NONE SPECIFIED (CONDITION A NOT ACCEPTABLE)	100	150
H900	H900	170	190
H925	H925	155	170
H1025	H1025	145	155
H1075	H1075	125	145
H1100	H1100	115	140
H1150	H1150	105	135
CONDA	CONDITION A (SOLUTION TREATED)		

NOTES: MATERIAL IN H900 AND H925 CONDITION NOT RECOMMENDED FOR TENSION OR SHEAR APPLICATIONS IN COLD WEATHER CONDITIONS
MATERIAL IN H900 AND H925 CONDITION NOT RECOMMENDED FOR APPLICATIONS WHERE STRESS CORROSION CRACKING IS POSSIBLE
CONDITION A NOT TO BE USED IN DESIGN FOR FINAL PRODUCT AND SHOULD ALWAYS BE HEAT TREATED

EXAMPLES:

PART	PART NUMBER
4.000" DIAMETER BAR MIN UTS = 150 KSI, MIN YTS = 100 KSI	M17-4-R4.000
2.500" DIAMETER BAR H900 CONDITION	M17-4-H900-R2.500
3.250" DIAMETER BAR H1025 CONDITION	M17-4-H1025-R3.250
0.750" DIAMETER BAR A CONDITION	M17-4-CONDA-R0.750

RELEASED
2017-10-31
EVAL-728

APPROVED

REV.	DESCRIPTION	DATE
C	ADDED MATERIAL CONDITION (C17-107)	17.09.14
B	REFORMAT DWG. S17400/TYPE 630 ADDED TO PURCHASE MATERIAL (2N D8-1). ADD A564 SPEC (C8-1). REF PAR 08-020A	10.05.20
A	NEW ISSUE	05.03.16
DESIGN	NO	
DRAWN	NO	
CHECKED	CP	
MFG. APPR.	RA	
APPROVED	WM	
DE APPR.	CP	
DATE	17.09.14	

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA
DRAWING NO. M17-4-R
SHEET 1 OF 1
SCALE NTS

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MATERIAL RECEIPT INSPECTION FORM

PO / BATCH NO.: 039125/5049431

THICKNESS ORDERED: 1.375
 THICKNESS RECEIVED: 1.375
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

MATERIAL: M4140H-R1.375
 DATE: MAR 08 2018

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 20'
 QUANTITY INSPECTED: 20'
 QUANTITY REJECTED: 0

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y	
CORRECT FINISH	<input checked="" type="radio"/> Y	
CORROSION	<input checked="" type="radio"/> Y	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	Attn A193
CORRECT THICKNESS	<input checked="" type="radio"/> Y	
PHOTO REQUIRED	<input checked="" type="radio"/> Y	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	Heat # 243795
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.
RECORD RESULTS BELOW
HRC
HRB
DUR A
DUR D
WEBSTER

Testers located in the Quality Office

QC 18 INSPECTION
 ENGINEERING SIGNOFF (if required)
 INSPECTED BY: DAS
 DATE: 9-89 MAR 08 2018
 SIGNED OFF BY:
 DATE:

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

050375
RELEASED

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Eg. 7/8" Round Bar = M4140H-R.0.875

PURCHASE MATERIAL: AISI 4140H ROUND BAR
PER AISI 4140 OR ASTM A304-02/-A-434-BC /
-A193-03-GRADE-B7 / -A29-03 / -A322-91 OR
UNS # - G41400
MINIMUM ULTIMATE TENSILE STRENGTH = 100 KSI
MINIMUM YIELD TENSILE STRENGTH = 66 KSI
PART NUMBER: M4140H-R | D.D.D | DIA
WHERE D.D.D = DIAMETER IN INCHES

DESIGN	DRAWN BY	CHECKED	APPROVED	DATE	TITLE	SCALE
				05.02.21	4140 ROUND BAR	1:1
				05.02.21	NEW ISSUE	
DART AEROSPACE LTD	HAWKESBURY, ONTARIO, CANADA	REV. A	SHEET 1 OF 1			



MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-A513-T-0.750W0.085 PO / BATCH NO. Q39126/5049430 DATE: MAR 08 2018

MATERIAL CERT REC'D: YES QUANTITY RECEIVED: 23' QUANTITY INSPECTED: 23' QUANTITY REJECTED: 0

THICKNESS ORDERED: W.0.085 THICKNESS RECEIVED: W.0.085 SHEET SIZE ORDERED: N/A SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y	
CORRECT FINISH	<input checked="" type="radio"/> Y	
CORROSION	<input checked="" type="radio"/> Y	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	
CORRECT THICKNESS	<input checked="" type="radio"/> Y	
PHOTO REQUIRED	<input checked="" type="radio"/> Y	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

OC 18 INSPECTION ENGINEERING SIGNOFF (if required)

INSPECTED BY: DAS SIGNED OFF BY: _____ DATE: MAR 08 2018

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

IN WITH-

note

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M74140-B-1.250x2.000 DATE: MAR 08 2018
 PO / BATCH NO.: 039125/5049429

THICKNESS ORDERED: <u>1.250</u>	MATERIAL CERT REC'D: <u>yes</u>
THICKNESS RECEIVED: <u>1.250</u>	QUANTITY RECEIVED: <u>6'</u>
SHEET SIZE ORDERED: <u>N/A</u>	QUANTITY INSPECTED: <u>6'</u>
SHEET SIZE RECEIVED: <u>N/A</u>	QUANTITY REJECTED: <u>0</u>

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	
CORROSION	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/>	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	
PHOTO REQUIRED	<input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	
CORRECT # ON THE MATERIAL	<input checked="" type="checkbox"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.	RECORD RESULTS BELOW	TYPE OF MATERIAL	SIZE OF TEST SAMPLE	HARDNESS / DUROMETER READING
		HRC		
		HRB		
		DUR A		
		DUR D		
		WEBSTER		

TESTERS LOCATED IN THE QUALITY OFFICE				

QC 18 INSPECTION ENGINEERING SIGNOFF (if required)

INSPECTED BY: DAS DATE: MAR 08 2018

SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	18-544	18.2.13	VM	ML

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL : AISI 4140 / 4142 STEEL SHEET OR PLATE
 MINIMUM ROCKWELL C = 28 Rc
 MAXIMUM ROCKWELL C = 32 Rc

SPECIFICATION: ASTM A829, AMS 6395

PART NUMBER:

MT-4140-S-IT-TTTT x W.WWW
 WHERE "T.TTTT" = THICKNESS IN INCHES
 WHERE "W.WWW" = WIDTH IN INCHES (OPTIONAL FOR SPECIFYING CUT PLATE)
 EX. 0.063" THICK SHEET = MT-4140-S-0.063
 EX. 3.5" WIDE BY 0.500" THICK PLATE = MT-4140-S-0.500X3.500

DART AEROSPACE		Hamilton, Ontario, Canada	
TITLE AISI 4140 / 4142 STEEL SHEET OR PLATE			
PART NO. MT-4140-S		REV A	
FIG. NO.	INITIALS AND DATE	UNLESS OTHERWISE SPECIFIED:	
DESIGNED BY: VM 2/13/2018	DATE: 2/13/2018	DIMENSIONS: ALL IN INCHES	
CHECKED BY: VM 02/13/2018	DATE: 02/13/2018	FRACTIONS: 1/16	
INFO REVIEW BY: DD 02/13/2018	DATE: 02/13/2018	ANGLES: ± 3°	
APPROVED BY: ML 02/14/2018	DATE: 02/14/2018	ROUNDS: ± 0.005	
SCALE: NTS		SHEET 1 OF 1	
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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M-F-4140-B-1.250X1.500 DATE: MAR 08 2018
 PO / BATCH NO.: 039125 / 8449428

MATERIAL CERT REC'D: YES
 QUANTITY RECEIVED: 61
 QUANTITY INSPECTED: 61
 QUANTITY REJECTED: 0
 THICKNESS ORDERED: 1.250
 THICKNESS RECEIVED: 1.250
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	(N)	
CORRECT FINISH	(Y)	
CORROSION	(N)	
CORRECT GRAIN DIRECTION	(Y)	
CORRECT MATERIAL PER M-DRAWING	(Y)	
CORRECT THICKNESS	(Y)	
PHOTO REQUIRED	(Y)	
CORRECT REF # TO LINK CERT	(Y)	
CORRECT MATERIAL IDENTIFICATION	(Y)	
CORRECT M# ON THE MATERIAL	(Y)	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	(Y)	
DOES THIS REQUIRE AN EXTRUSION REPORT	(Y)	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

QC 18 INSPECTION
 ENGINEERING SIGNOFF (if required)
 INSPECTED BY: DAS
 DATE: 9-89 MAR 08 2018
 SIGNED OFF BY: _____
 DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	18-544	18.2.13	VM	ML


SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL : AISI 4140 / 4142 STEEL SHEET OR PLATE
 MINIMUM ROCKWELL C = 28 Rc
 MAXIMUM ROCKWELL C = 32 Rc

SPECIFICATION: ASTM A829, AMS 6395

PART NUMBER: MT-4140-S-[T.TTT] x [W.WWW]
 WHERE "T.TTT" = THICKNESS IN INCHES
 WHERE "W.WWW" = WIDTH IN INCHES (OPTIONAL FOR SPECIFYING CUT PLATE)

EX. 0.063" THICK SHEET = MT-4140-S-0.063
 EX. 3.5" WIDE BY 0.500" THICK PLATE = MT-4140-S-0.500X3.500

 DART AEROSPACE <small>Head Office / Centre, Canada</small>	
TITLE	
AISI 4140 / 4142 STEEL SHEET OR PLATE	
PART NO.	REV
MT-4140-S	A
DESIGNED BY: VM 2/13/2018 CHECKED BY: VM 02/13/2018 APPROVED BY: ML 02/14/2018 INITIALS AND DATE DIMENSIONS ARE IN INCHES DIMENSIONS APPLY AFTER FINISHING TOLERANCES: FRACTIONS 1/16 ANGLES 1.5° ROUNDNESSES SCALE: NTS SHEET 1 OF 1	
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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M-F-21140-B-1.000X1.250 DATE: MAR 08 2018
 PO / BATCH NO.: 039125/5049407

MATERIAL CERT REC'D: <u>YES</u>	THICKNESS ORDERED: <u>1.000</u>
QUANTITY RECEIVED: <u>6'</u>	THICKNESS RECEIVED: <u>1.000</u>
QUANTITY INSPECTED: <u>6'</u>	SHEET SIZE ORDERED: <u>N/A</u>
QUANTITY REJECTED: <u>0</u>	SHEET SIZE RECEIVED: <u>N/A</u>

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y	
CORRECT FINISH	<input checked="" type="radio"/> Y	
CORROSION	<input checked="" type="radio"/> Y	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	
CORRECT THICKNESS	<input checked="" type="radio"/> Y	
PHOTO REQUIRED	<input checked="" type="radio"/> Y	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	
DOES THIS MATERIAL REQUIRE	<input checked="" type="radio"/> Y	
ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u>	SIGNED OFF BY: _____	DATE: <u>9-8 MAR 08 2018</u>

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	18-544	18.2.13	VM	ML

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL : AISI 4140 / 4142 STEEL SHEET OR PLATE
MINIMUM ROCKWELL C = 28 Rc
MAXIMUM ROCKWELL C = 32 Rc

SPECIFICATION:

ASTM A829, AMS 6395

PART NUMBER:

MT-4140-S-TT-TTT x W.WWW
WHERE "T, TTT" = THICKNESS IN INCHES
WHERE "W, WWW" = WIDTH IN INCHES (OPTIONAL FOR SPECIFYING CUT PLATE)

EX. 0.063" THICK SHEET = MT-4140-S-0.063
EX. 3.5" WIDE BY 0.500" THICK PLATE = MT-4140-S-0.500X3.500

DART AEROSPACE		Manufactured in Ontario, Canada	
TITLE AISI 4140 / 4142 STEEL SHEET OR PLATE			
PART NO. MT-4140-S		REV A	
TOOL NO.			
DESIGNED BY: VM 2/13/2018 CHECKED BY: VM 02/13/2018 APPROVED BY: ML 02/14/2018			
INITIALS AND DATE		TOLERANCES: FRACTIONS 1/16 SURFACE 3.3 ROUGHNESS	
DIMENSIONS ARE IN INCHES DIMENSIONS APPLY AFTER FINISHING		SCALE: NTS SHEET 1 OF 1	
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